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STATUS OF THE GENERIC NAME *ZORILLA* (MAMMALIA): NOMENCLATURE BY RULE OR BY CAPRICE

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An article by Ellerman and Morrison-Scott (1954) entitled "*Ictonyx* Kaup, 1835, the correct generic name, and *Ictonyx striatus* (Perry), 1810, the correct specific name for the African Stinkmuishond," brings to the fore three fundamental issues, as follows.

I. Shall a generic name be applied to some one of the animals originally described under that name, or may it be restricted to an animal alien to the original description of the genus?

II. Shall the type of a genus be one of the species included in the original definition of that genus, or may it be some other species selected by a future reviser?

III. Shall a post-Linnaean taxonomic work that has been printed, distributed and consistently cited in scientific publications for its valid binomials be duly recognized, or may it be suppressed in part or in whole according to the dictates of convenience or prejudice?

The first question refers to the status of the generic name *Zorilla*. Hershkovitz (1953: 378-379) deemed it relevant to present a full transcription of the original description of the genus *Zorilla* I. Geoffroy as documentary evidence for the pertinence of that name to African polecats. Ellerman and Morrison-Scott (1953, 1954) have made it evident, on the other hand, that they regard the text of the description of *Zorilla* as irrelevant because they make no allusions to it in their attempt to justify application of the name to American polecats currently and correctly referred to the genus *Spilogale* Gray. To facilitate examination of the problem, a literal translation of the description of *Zorilla* I. Geoffroy (1826:215) is given herewith.

"The zorillas, *Zorilla*. They agree with polecats in their dental formula; in their long powerful claws they are similar to skunks. They also resemble skunks in coloration. Because of the modification of their claws zorillas cannot climb trees as do [some] other mustelids. However, like skunks, they dig well and make burrows. Not more than *one species* [italics mine] of this subgenus has been recognized.

"Le Zorille, Buff. T. XIII, pl. 41; *Mustela Zorilla* et *Viverra Zorilla* of systematists, is more than a foot long from the tip of its snout to the base of its tail which is about eight inches long. It is usually black with several white spots on the head and several longi-

tudinal stripes of the same color on the upper part of the body. The stripes and spots are rather constant in pattern but their proportional size varies considerably. The species is not restricted to the Cape of Good Hope; it occurs, also in Senegal and along the shores of the Gambia River where it was found by the ill-fated voyager, Bodwich [sic = Thomas Edward Bowdich, 1791-1824]. The zorilla of Senegal and the Gambia differs in several respects from the one of the Cape. While the same pattern of spots and stripes obtains in both, in the first the white is much more extensive than the black with the result that the pelage is nearly entirely white on the upper parts and the sides of the body. In the Cape variety, the reverse appears to be true. Nevertheless, we do not believe that the two animals should be regarded as each representing a distinct species because the extension of the white varies so much among individuals of any one locality that it is difficult to find two specimens exactly alike.''

The above translation supplies the answer to the question of what kind of animals the genus *Zorilla* is based on and the place of origin of those animals. The second question is, shall the type of *Zorilla* be the species of African polecats described in the original definition of the genus or shall it be an exotic American polecat of the genus *Spilogale?* Actually, there is no alternative, because not only is the African species described but it is particularly stated by I. Geoffroy that only the African species is included in the genus *Zorilla.*

Ellerman and Morrison-Scott, on the other hand, follow a peculiar course in their attempt to determine the genotype. They (1954:130) first quote with approval the statement that, ''the type species of *Zorilla* I. Geoffroy, 1826, is, as Hershkovitz (Proc. Biol. Soc. Washington, 62:14, 1949) points out, 'Le Zorille, Buff. T. XIII, pl. 41; *Mustela Zorilla* et *Viverra Zorilla* des auteurs systématiques'.'' They go on, however, to declare, ''since the only bibliographic reference is to Buffon, the identity of *Zorilla* I. Geoffroy must clearly be that of Buffon's plate.'' This obviously is not the case.

The generic name *Zorilla* is *not* based on a description of Buffon's *zorille* or on a reference to it. The name is based clearly, unequivocally and *exclusively* on a description of specimens of African polecats placed before the author, I. Geoffroy. Indeed, the original definition of *Zorilla* remains to this day the best taxonomic treatment of these animals. Inclusion of a bibliographic reference to Buffon's *zorille* in the indicated genotype rests solely on Geoffroy's assumption that the animal is the same as the ''*Mustela Zorilla* et *Viverra Zorilla* des auteurs systématiques.'' Buffon's *zorille* cannot stand alone as genotype on the premise, apparently adopted by Ellerman and Morrison-Scott, that the whole is equal to any of its parts. The charge of ''selection,'' cancellation and substitution of type species, directed by Ellerman and Morrison-Scott (1954-130) against me, actually applies to action taken by those authors.

In this connection, Article 30 Ic of the International Rules of Zoological Nomenclature states, ''a genus proposed with a single original species takes that species as its type. (Monotypical genera).'' The only species in the original description of *Zorilla* is an African polecat. There can be no ''selection.'' Unfortunately, the *name* indicated by I. Geoffroy for the species described is composite and ambiguous for

nomenclatural purposes. It consists of three distinct but synonymous elements, namely "Le *Zorille* Buff, T. XIII, pl. 41," and "*Mustela Zorilla,*" and "*Viverra Zorilla.*" In this case, Article 30 Id of the Code is decisive in resolving the nomenclatural difficulty. It declares that "if a genus, without originally designated or indicated type, contains among its original species one possessing the generic name as its specific or subspecific name, either as valid name or synonym, that species or subspecies becomes *ipso facto* type of the genus. (Type by absolute tautonomy)."

Mustela zorilla, by virtue of possessing both generic and subgeneric names as the components of its specific name is indisputably that part of the original genotypic designation that becomes "*ipso facto*" the name of the genotype. It had been shown by me (1953:379) that *Mustela zorilla* I. Geoffroy, 1826, is the same as *Mustela zorilla* E. Geoffroy, 1803. It appears now that the combination *Mustela zorilla* had already been proposed by G. Cuvier in 1798 (Tabl. Élém. Hist. Nat., p. 116) for polecats of the Cape of Good Hope.

It seems that Ellerman and Morrison-Scott missed the point entirely regarding my earlier (1949) use of *Viverra mapurita* Müller, 1776, as the name for the genotype of *Zorilla* I. Geoffroy. This binomial was the first applied strictly to Buffon's *zorille* and cannot be used for anything else. If Buffon's *zorille* is identifiable as an African polecat, Müller's technical name is the earliest for the animal later described by G. Cuvier, E. Geoffroy and I. Geoffroy. Hence *Mustela zorilla* of authors would become *Zorilla mapurita* (Müller) merely by synonymy. The name may change but the genotype does not. If Buffon's *zorille* is not identifiable as an African polecat, Müller's name for it is not available for any African animal described by Geoffroy or by anyone else. Finally, if Buffon's *zorille* is, as Ellerman and Morrison-Scott would have it, an American spotted skunk of the genus *Spilogale,* the name *Viverra mapurita* automatically becomes *Spilogale mapurita* (Müller). Such identification of Buffon's *zorille* would cancel my use of Müller's name for the genotype of *Zorilla* because, according to Article 30 IIa of the Code, an American animal is a species "not included under the generic name at the time of its original publication." To avoid the confusion and controversy entailed by Ellerman and Morrison-Scott's cancellation, I finally proposed (1953:381) that Buffon's *zorille* be considered "not certainly identifiable." Disposition of Buffon's *zorille* made by me, by Ellerman and Morrison-Scott, by I. Geoffroy, or by anyone else, remains on a species level. The status of *Zorilla* as the correct generic name for the species of African polecats described by I. Geoffroy is not in the least affected.

The third question regarding the status of the work cited as a legitimate publication by one author and not recognized by another, was planted by Ellerman and Morrison-Scott (1954:130) in the following manner, "*Mustela zorilla* 'E. Geoffroy, 1803' is unavailable since the Cat. Mamm. Mus. Nat. Hist. was never published. This is made quite clear by I. Geoffroy, 1839, Magazin de Zoologie (2) 1, page 5 of the text dealing with mammal plates 1-4, and the work was rejected by Sherborn. Setzer, 1952, Proc. U. S. Nat. Mus., 102: 343, thought that I. Geoffroy said that his father's work *had* been published. But it

transpires (*in. litt.*) that Setzer was relying on a faulty rendering of the French text.''

In the above indictment, Ellerman and Morrison-Scott include no analysis of the censured work in the light of any definition, official or otherwise, of what constitutes publication. Their conclusion appears to be based entirely on a misinterpretation of Setzer's published opinion, on a purported change of heart expressed in private correspondence, on an undocumented reference to Sherborn, on an incomplete bibliographic reference to statements made by I. Geoffroy, none of which are quoted. Last, but not least, Ellerman and Morrison-Scott give no indication that they have even examined the work they condemned.

What Setzer (1952:102) said in the place cited by Ellerman and Morrison-Scott, is ''The 'Catalogue des Mammifères du Museum National d'Histoire Naturelle' meets all requirements for Linnaean names as established by the International Commission on Zoological Nomenclature. In all instances the descriptions are clearly recognizable. It is believed that the statement of Isidore Geoffroy St.-Hilaire, to the effect that his father never intended the above work for a scientific treatise, should not be accepted, inasmuch as the work is clear, concise, and was published and circulated.'' I see no reason for altering these statements and I subscribe to them without reservation.

What I. Geoffroy said about the ''Catalogue des Mammifères . . .'' is variously recorded in three distinct accounts. In the first, the one referred to by Ellerman and Morrison-Scott, I. Geoffroy (1839:5 and footnote 2) notes that (translated literally), ''this work, written about 1800 and cited in all mammalogical works, remained unpublished [''inédit'']. Its printing was well advanced when a protracted illness obliged my father to leave to a person little versed in zoology, the task of completing the work. Upon his recovery, my father recognized that several serious errors had been committed and he renounced the publication of the book. Nevertheless copies [printed] were given away successively to various naturalists [who] by means of their citations [gave] very wide . . . publicity to a work which its author had condemned to oblivion.'' In the biography of his father I. Geoffroy (1847: 118) explains that it was one of the elder Geoffroy's students who was ''entrusted with the task of reading proof.'' He added that the edition of the ''Catalogue . . .'' was saved from destruction by its own author because colleagues, notably Cuvier, intervened and thus ''the first extended work written by Geoffroy Saint-Hilaire became a part of the science [of mammalogy].'' In an appendix to the biography, I. Geoffroy places (p. 241) his father's ''Catalogue . . .'' at the head of the list of works published by him [''publiés par lui''] and adds the descriptive note ''Volume in-8°.'' Finally, in 1851 (Cat. Meth. Coll. Mamm., p. v) I. Geoffroy gives an altered version by stating that his ''father wrote part of the ''Catalogue . . .'' before his journey to Egypt and part of it on his return. He adds that the ''volume in-8°'' was printed [''imprimé''] in 1803 and (loc. cit. footnote 2) ''distributed both in France and abroad and is cited in all treatises on mammalogy.''

It is evident from the text of the above accounts that I. Geoffroy used the term unpublished [''inédit''] subjectively in attempting to transmit the wish of his father that the ''Catalogue . . .'' was dis-

avowed by its author. He then applies the term published ["publié"] objectively when referring to the physical state of the work itself.

Publication and circulation are the requirements for making available properly constituted scientific names proposed in a work by a binomialist. The copy of E. Geoffroy's "Catalogue . . ." consulted by me is housed in the library of the U. S. Department of the Interior. It is not a manuscript or a collection of proof sheets or tear sheets. It is a volume in 8vo with its pages numbered consecutively from 1 to 272. It is printed with the same style type and on the same quality of paper as were other official publications of the Paris Museum at that time. According to Article 25 of the Code, the names in E. Geoffroy's "Catalogue . . ." are valid and according to Article 32, "a generic or a specific name, once published, cannot be rejected, even by its author. . . ." Thus the disavowal of the "Catalogue . . ." by the author, the apologies made by his son, and the protestations raised by Ellerman and Morrison-Scott, are of no avail. Indeed, it appears that these authors regard the "Catalogue . . ." as "unpublished" only on certain occasions. In their "Checklist of Palaearctic and Indian Mammals, 1758 to 1946" Ellerman and Morrison-Scott (1951:581) are of a different humor and list as valid, *Rattus rattus alexandrinus* Geoffroy, 1803, with the citation "1803 *Mus alexandrinus* Geoffroy, Cat. Mamm. H. N. Paris 192. Alexandria, Egypt."

I add a final example on the same subject that bears directly upon the question of whether stability in scientific nomenclature is attained through International Rules or through individual caprice. In another publication, entitled "Southern African Mammals 1758 to 1951: A reclassification," Ellerman and Morrison-Scott, with R. W. Hayman (1953:111) list *Rhabdogale* Wiegmann as a synonym of *Ictonyx* (=*Zorilla*) and "select" *Bradypus striatus* Perry as type species. According to the Code, this action is invalid and void. The original genotype of *Rhabdogale* is "Die Zorillen Afrika's." This leaves nothing for selection. First reviser of the genus *Rhabdogale* is Wagner (1841:219, fig. 133A). He described and figured the monotype "*Rh. mustelina* Wagn." new name for *Mustela zorilla* of authors (Cuvier, Desmarest, I. Geoffroy and Smuts). This subsequent designation (definitely not a "selection") of a name for the genotype of *Rhabdogale* is not subject to change. (cf. Article 30 II f and g of the Rules of Zoological Nomenclature).

The case for *Zorilla* I. Geoffroy, 1826, as generic name for African polecats typified by *Mustela zorilla* G. Cuvier 1798, is so clear as in no way to call for special action by the International Commission on Zoological Nomenclature.

The genus and only included species stands as follows.

Genus *Zorilla* I. Geoffroy

Zorilla I. Geoffroy, 1826, Dict. Class. Hist. Nat., Paris, 10:215—subgenus of *Mustela;* genotype by monotypy, *Mustela zorilla* I. Geoffroy = *Mustela zorilla* G. Cuvier; G. Cuvier, 1829, Dict. Sci. Nat., Paris, 59:499—full genus; Gray, 1869, Catalogue of carnivorous, pachydermatous, and edentate Mammalia, British Mus. (Nat. Hist.), p. 139—part; Trouessart, 1897, Cat. Mamm., p. 258—part; Hersh-

kovitz, 1949, Journ. Mamm., 30:295—generic name valid for African polecats.

Ictonyx Kaup, 1835, Das Thierreich, 1:352—genotype by monotypy, *Ictonyx capensis* Kaup = *Zorilla zorilla zorilla* G. Cuvier. Howell, Proc. Biol. Soc. Washington, 19:46—"Zorilla" Oken not valid, replaced by *Ictonyx* Kaup; Ellerman, Morrison-Scott, Hayman, 1953, Southern African mammals 1758 to 1951: A reclassification, British Mus. (Nat. Hist.), p. 111—classification, synonymy, distribution.

Rhabdogale Weigmann, 1838, Arch. Naturg., Jahrg. 4, **1**:287, footnote 9—genotype, "die Zorillen Afrika's;" Wagner, 1841, Schreber's Säugthiere, supply. 2:217—designated genotype, *Rhabdogale mustelina* Wagner = *Zorilla zorilla zorilla* G. Cuvier.

Zorilla zorilla zorilla G. Cuvier

Mustela zorilla G. Cuvier, 1798, Tabl. Élém. Nat. Hist., p. 116—original description of "le zorille, ou putois du Cap."

Bradypus striatus Perry, 1810, Arcana, or The Museum of Natural History, pt. 2, zoology, text and pl. 41—"exhibited alive in London . . . and is reported to have been found in South America;" Hollister, 1915, Proc. Biol. Soc. Washington, 28:184—type locality, of *Bradypus striatus* Perry designated Cape of Good Hope.

Ictonyx striatus striatus G. M. Allen, 1939, Bull. Mus. Comp. Zool., 88:179—synonyms: *striatus* Perry, *capensis* Smith, *capensis* J. B. Fischer, *africana* Lichtenstein, *mustelina* Wagner, *variegata* Lesson *zorilla* Trouessart; Ellerman, Morrison-Scott, Hayman, 1953, Southern African mammals 1758 to 1951: A reclassification, British Mus. (Nat. Hist.), p. 112—synonyms: *striatus* Perry, *capensis* Smith, *zorilla* Smuts, *africana* Lichtenstein, *mustelina* Wagner, *pondoensis* Roberts.

Currently recognized subspecies of *Zorilla zorilla* are: *Z. z. limpoensis* Roberts, *Z. z. maximus* Roberts, *Z. z. orangiae* Roberts, *Z. z. pretoriae* Roberts, *Z. z. arenarius* Roberts, *Z. z. ghansiensis* Roberts, *Z. z. shortridgei* Roberts, *Z. z. lancasteri* Roberts, *Z z. kalaharicus* Roberts, *Z. z. giganteus* Roberts, *Z. z. ovamboensis* Roberts, *Z. z. albescens* Heller, *Z. z. elgonis* Granvik, *Z. z. erythrae* De Winton, *Z. z. intermedius* Anderson and De Winton, *Z. z. obscuratus* de Beaux, *Z. z. senegalensis* J. B. Fischer (includes *Mustela zorilla* E. Geoffroy, 1803), *Z. z. shoae* Thomas, *Z. z. sudanicus* Thomas and Hinton.

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